

St.James College of Pharmaceutical Sciences St.James medical Academy River Bank, Chalakudy			
Programme:	B.Pharm	Sem.:	IV
Name of Course: (Subject)	Pharmacognosy and phytochemistry I	Course Code:	BP405
Teaching faculty of the course			

Summary of the Lecture Plan

Topic	Lectures	Hours
Introduction to Pharmacognosy(10 HOURS)	Definition, history, scope and development of Pharmacognosy	01
	<ul style="list-style-type: none"> • Sources of Drugs – Plants, Animals, Marine & Tissue culture • Organized drugs,(seed, leaf, bark, wood ,root and rhizome, flower, fruit and entire drug) • unorganized drugs, (dried latex, dried juices, dried extracts, gums and mucilages, oleoresins and oleo- gum -resins). 	01
	Classification of drugs: Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and sero taxonomical classification of drugs	01
	Quality control of Drugs of Natural Origin: Adulteration of drugs of natural origin. Evaluation by organoleptic, microscopic, physical, chemical and biological methods.	05
	Quantitative microscopy of crude drugs including lycopodium spore method, leaf constants, Camera Lucida, micrometers and calibration of eye piece micrometer	02
Cultivation, Collection, Processing and storage of drugs of natural origin(10 HOURS)	Cultivation, Collection, Processing and storage of drugs of natural origin: General aspects on Cultivation and Collection,processing and storage of drugs of natural origin.	03
	Factors influencing cultivation of medicinal plants.	03
	Plant hormones and their applications.	01
	Polyploidy, mutation and hybridization with reference to medicinal plants.	02
	Conservation of medicinal plants: In situ and ex situ conservation of medicinal plants.	01

Plant tissue culture(07 HOURS)	Historical development of plant tissue culture, types of cultures, Nutritional requirements, growth and their maintenance.	03
	Applications of plant tissue culture in Pharmacognosy.	02
	Edible vaccines	02
Pharmacognosy in various systems of medicine	Role of Pharmacognosy in allopathy and traditional systems of medicine namely, Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine.	05
Introduction to secondary metabolites:	Definition, classification, properties and general tests for identification of Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins	05
Study of biological source, chemical constituents and uses of drugs of natural origin containing following Plant drugs /Products	Fibers - Cotton, Jute, Hemp Hallucinogens-Tobacco, Cannabis Teratogens _Colchicum , Veratrum	02
	Natural allergens-Classification,Preparation and standardization of allergenic extract.	01
Primary metabolites: General introduction, detailed study with respect to chemical constituents, sources, preparation, evaluation, preservation, storage, therapeutic uses and commercial utility as Pharmaceutical Aids and/or Medicines for the following Primary metabolites:	Carbohydrates: Acacia, Agar, starch, Tragacanth, Honey	02
	Proteins and Enzymes: Gelatin, casein, proteolytic enzymes (Papain, bromelain, serratiopeptidase, urokinase, streptokinase, pepsin)	01
	Lipids(Waxes, fats, fixed oils) : Castor oil, Chaulmoogra oil, Wool Fat, Bees Wax	01
	Marine Drugs: Novel medicinal agents from marine sources: Antiviral, Antimicrobial, Anticancer & cardiovascular agents.	01

Major issues or Core aspects to be addressed/ covered:

Introduction to Pharmacognosy:
(a) Definition, history, scope and development of Pharmacognosy (b) Sources of Drugs – Plants, Animals, Marine & Tissue culture (c) Organized drugs,(seed, leaf, bark, wood ,root and rhizome, flower, fruit and entire drug)

unorganized drugs, (dried latex, dried juices, dried extracts, gums and mucilages, oleoresins and oleo- gum -resins).
Classification of drugs: Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and sero taxonomical classification of drugs.
Quality control of Drugs of Natural Origin: Adulteration of drugs of natural origin. Evaluation by organoleptic, microscopic, physical, chemical and biological methods
Quantitative microscopy of crude drugs including lycopodium spore method, leaf constants, Camera Lucida, micrometers and calibration of eye piece micrometer.
Cultivation, Collection, Processing and storage of drugs of natural origin:
General aspects on Cultivation and Collection, processing and storage of drugs of natural origin
Factors influencing cultivation of medicinal plants.
Plant hormones and their applications
Polyploidy, mutation and hybridization with reference to medicinal plants.
Conservation of medicinal plants: In situ and ex situ conservation of medicinal plants.
Plant tissue culture
Historical development of plant tissue culture, types of cultures, Nutritional requirements, growth and their maintenance.
Applications of plant tissue culture in Pharmacognosy.
Edible vaccines
Pharmacognosy in various systems of medicine
Role of Pharmacognosy in allopathy and traditional systems of medicine namely, Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine
Introduction to secondary metabolites:
Definition, classification, properties and general tests for identification of Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins
Study of biological source, chemical constituents and uses of drugs of natural origin containing following Plant drugs /Products:
Fibers - Cotton, Jute, Hemp Hallucinogens-Tobacco, Cannabis Teratogens _Colchicum , Veratrum
Natural allergens-Classification,Preparation and standardization of allergenic extract.
Primary metabolites: General introduction, detailed study with respect to chemical constituents, sources, preparation, evaluation, preservation, storage, therapeutic uses and commercial utility as Pharmaceutical Aids and/or Medicines for the following Primary metabolites:
Carbohydrates: Acacia, Agar, starch, Tragacanth, Honey
Proteins and Enzymes: Gelatin, casein, proteolytic enzymes (Papain, bromelain, serratiopeptidase, urokinase, streptokinase, pepsin).
Lipids(Waxes, fats, fixed oils) : Castor oil, Chaulmoogra oil, Wool Fat, Bees Wax
Marine Drugs
Novel medicinal agents from marine sources: Antiviral, Antimicrobial, Anticancer and cardiovascular agents.

SAMPLE QUESTIONS

Introduction to Pharmacognosy:
<ul style="list-style-type: none"> • Definition, history, scope and development of Pharmacognosy • Sources of Drugs – Plants, Animals, Marine & Tissue culture • Organized drugs,(seed, leaf, bark, wood ,root and rhizome, flower, fruit and entire drug) • unorganized drugs, (dried latex, dried juices, dried extracts, gums and mucilages, oleoresins and oleo- gum -resins).
<ul style="list-style-type: none"> • Different types of Classification of drugs Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and sero taxonomical classification of drugs.
<p>Quality control of Drugs of Natural Origin:</p> <ul style="list-style-type: none"> • Adulteration of drugs of natural origin. • Organoleptic evaluation methods • Methods of microscopic evaluation • Physicalevaluation techniques • Chemical methods of evaluation • biological methods of evaluation
<p>Quantitative microscopy of crude drugs</p> <ul style="list-style-type: none"> • lycopodium spore method, • methods of determining leaf constants, • explain working of Camera Lucida, micrometers • how can we do calibration of eye piece micrometer.
Cultivation, Collection, Processing and storage of drugs of natural origin:
<ul style="list-style-type: none"> • Different methods adopted for Cultivation • Collection methods, • Processing techniques • storage of drugs of natural origin
<ul style="list-style-type: none"> • Endogenous Factors influencing cultivation of medicinal plants. • Exogenous Factors influencing cultivation of medicinal plants.
<ul style="list-style-type: none"> • Plant hormones and their applications
<ul style="list-style-type: none"> • Explain Polyploidy, mutation and hybridization with reference to medicinal plants.
<ul style="list-style-type: none"> • Conservation of medicinal plants: In situ and ex situ conservation of medicinal plants.
Plant tissue culture
<ul style="list-style-type: none"> • Historical development of plant tissue culture, • Different types of cultures, • Nutritional requirements for tissue culture, • growth curve and their maintenance.
<ul style="list-style-type: none"> • Applications of plant tissue culture in Pharmacognosy.
<ul style="list-style-type: none"> • Explain Edible vaccines
Pharmacognosy in various systems of medicine
<ul style="list-style-type: none"> • Role of Pharmacognosy in allopathy and traditional systems of medicine namely, Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine
Introduction to secondary metabolites:
<ul style="list-style-type: none"> • Definition, classification, properties and general tests for identification of Alkaloids,

Glycosides, Flavonoids, Tannins, Volatile oil and Resins
Study of biological source, chemical constituents and uses of drugs of natural origin containing following Plant drugs /Products:
<ul style="list-style-type: none"> • Fibers - Cotton, Jute, Hemp • NEPS • Hallucinogens-Tobacco, Cannabis • Teratogens _Colchicum , Veratrum
<ul style="list-style-type: none"> • Natural allergens-Classification, • Preparation and standardization of allergenic extract.
<p>Primary metabolites: General introduction, detailed study with respect to chemical constituents, sources, preparation, evaluation, preservation, storage, therapeutic uses and commercial utility as Pharmaceutical Aids and/or Medicines for the following Primary metabolites:</p>
<ul style="list-style-type: none"> • Carbohydrates: Acacia, Agar, starch, Tragacanth, Honey
<ul style="list-style-type: none"> • Proteins and Enzymes: Gelatin, casein, proteolytic enzymes (Papain, bromelain, serratiopeptidase, urokinase, streptokinase, pepsin).
<p>Lipids(Waxes, fats, fixed oils) :</p> <ul style="list-style-type: none"> • Castor oil • Chaulmoogra oil, • Wool Fat, • Bees Wax
Marine Drugs
<p>Novel medicinal agents from marine sources:</p> <ul style="list-style-type: none"> • Antiviral, Antimicrobial, Anticancer and cardiovascular agents.

